Remarks

Reconsideration and allowance of this application, as amended, are respectfully requested. Claims 8 and 10 have been amended and new claims 11 and 12 have been added. Claims 8, 10, 11, and 12 are now pending in the application. The rejections are respectfully submitted to be obviated in view of the amendments and remarks presented herein. No new matter has been introduced through the foregoing amendments.

Claim 8 has been amended to even more particularly point out and distinctly claim the subject matter of Applicants' invention. Claim 10 has been amended to proper dependent form. Claims 11 and 12 have been added to enhance the scope of protection sought for the invention.

Entry of each of the amendments is respectfully requested.

35 U.S.C. §§ 102(b)/103(a) - Taga

Claims 8 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by, or under § 103(a) as being obvious over, U.S. Patent No. 4,504,109 to Taga et al. (hereinafter "Taga").

The Office Action asserts in pertinent part that Taga discloses an article having "a barrier layer (first layer 20) mainly formed of tin oxide (ITO) deposited on the under layer, . . . and an electrode film (second layer 20) deposited on the insulating film . . ." (Office Action page 3, numbered section 5, paragraph 2). The Office Action asserts that "[i]t is also noted that Taga specifically discloses that ITO is electrically conductive (column 6, lines 32-36), therefore, an ITO layer can be considered an electrode film" (Office Action page 3, numbered section 5, paragraph 3).

The rejection of claims 8 and 10 under §§ 102(b)/103(a) is respectfully traversed. For at least the following reasons, the

disclosure of Taga neither anticipates, nor would have rendered obvious, Applicants' claimed invention.

Applicants' claimed invention is directed to a glass substrate for a display. The disclosed purpose of the invention is "to provide a glass article having no problem of stain due to metal colloids because of its excellent efficiency of preventing the diffusion of metal ions" (specification page 4, lines 2-5).

The disclosure of Taga does not anticipate Applicants' claimed invention because Taga's article is structurally different from the claimed glass substrate. As indicated above, the Office Action asserts that Taga's article has "a barrier layer (first layer 20) mainly formed of tin oxide (ITO)." Then, the Office Action asserts that Taga's article has "an electrode film (second layer 20)," because "an ITO layer can be considered an electrode film." Thus, the examiner uses Taga's ITO-containing infrared shield layer as both a barrier film and as an electrode.

Even if one accepts the examiner's logic, Taga still does not anticipate Applicants' claimed glass substrate. Taga's article does not meet, *inter alia*, Applicants' claim 8 requirement of "the barrier film and the insulating film being capable of substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate."

Implicit in the examiner's argument is that Taga's electrode film is capable of the diffusion of metal ions (i.e., in relation to Applicants' requirement of "preventing diffusion of metal ions of the electrode film"). But, since the examiner uses Taga's ITO-containing infrared shield layer 20 as both the electrode *and* the barrier film, also implicit in the examiner's position is that Taga's *barrier film would also diffuse metal ions*.

According to the examiner's assertion, Taga's infrared shield layer 20 would, on the one hand, be diffusing metal ions

(i.e., in its role as an electrode), and would, on the other hand, be preventing the diffusion of metal ions (i.e., in its role as a barrier film). The result is illogical.

The result is even more illogical when one considers that Taga's first layer 20 is separated from the substrate 10 by only one layer -- the interferential reflection layer 30. (See, e.g., Taga's Fig. 1.) Taga's reflection layer 30 has no ability to prevent the diffusion of metal ions. So, in the structure asserted by the examiner, Taga's first layer 20 would be diffusing metal ions through interferential reflection layer 30 directly into the glass substrate layer 10. The result, the staining of the glass with metal ions, would be exactly that which Applicants' invention was developed to prevent.

Taga's article, therefore, does not meet, *inter alia*, Applicants' claim 8 requirement of "the barrier film and the insulating film being capable of substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate."

Since Taga does not meet each limitation of the claimed invention, Taga does not anticipate the invention defined by Applicants' claim 8.

Claim 10 is allowable because it depends from claim 8, and for other reasons. Claim 10 includes the limitation that "the electrode film comprises at least one metal selected from the group consisting of silver, copper, and gold." Taga may disclose an ITO-containing interferential reflection layer 30, but certainly does not disclose Applicants' claimed metal electrode.

Similarly, the disclosure of Taga would not have rendered obvious Applicants' claimed glass substrate. First, Taga's disclosure does not teach or suggest all of Applicants' claim limitations. Secondly, there is no suggestion or motivation in Taga that would have led one to modify the reference in a way

that would produce the invention defined by either of Applicants' claims 8 or 10. Thirdly, the grounds of rejection constitute an improper reconstruction of Applicants' claimed invention.

First, to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. As indicated above in response to the § 102(b) rejection, however, Taga fails to teach all of Applicants' claim limitations.

Furthermore, Taga fails to even suggest all of Applicants' claim limitations. Regardless of the examiner's assertion that "an ITO layer can be considered an electrode film," the structure defined by Applicants' claims 8 and 10 would not have been obvious because the disclosure of Taga cannot be modified to rectify its above-described deficiencies. Thus, all of Applicants' claim limitations are not taught or suggested by the disclosure of Taga.

Secondly, there is no suggestion or motivation in Taga that would have led one to modify the reference in a way that would produce the invention defined by either of Applicants' claim 8 or 10. Taga is directed to an "Infrared Shielding Lamination," not Applicants' glass substrate suitable for use in a flat panel display or in an automobile rear window. Applicants' glass substrate (claim 8) includes i) "a barrier film comprising mainly at least one of indium oxide and tin oxide, and deposited on the under layer" and ii) "an electrode film for forming a display panel, deposited on the insulating film" with iii) "the barrier film and the insulating film being capable of substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate."

In Applicants' invention, the incentive for having the claimed barrier film and insulating film capable of substantially preventing the diffusion of metal ions of the electrode film into

the alkali-containing glass substrate is, as disclosed in Applicants' written description, to "to provide a glass article having no problem of stain due to metal colloids because of its excellent efficiency of preventing the diffusion of metal ions."

In view of the different subject matter disclosed by Taga, there is simply no incentive to modify Taga's infrared shielding lamination so as to arrive at Applicants' claimed glass substrate. Thus, there is no suggestion or motivation in Taga that would have led one to modify the reference in a way that would produce the invention defined by either of Applicants' claims 8 or 10.

Thirdly, the grounds of rejection constitute an improper reconstruction of Applicants' claimed invention. As indicated above, there is no suggestion or motivation in Taga that would have led one to modify the reference in a way that would produce the invention defined by either of Applicants' claim 8 or 10.

Therefore, the only possible manner in which the examiner could have arrived at his proposed modification is through an improper reconstruction. The examiner's modification is the result of impermissible hindsight derived from first having read Applicants' specification, and is an improper reconstruction of the claimed invention using Applicants' own disclosure as a roadmap for selectively modifying the applied prior art reference. This is especially evident from the examiner's assertion that Taga's ITO-containing infrared shield layer meets both Applicants' claimed barrier film, and electrode, requirements.

For at least the above reasons, reconsideration and withdrawal of the rejection of claims 8 and 10 under § 102(b) and § 103(a) are respectfully requested.

New claims 11 and 12 are also allowable. Independent claim 11 defines a glass substrate that includes i) "a barrier film disposed on the under layer, the barrier film comprising at least

one of indium oxide and tin oxide" and ii) "an electrode film disposed on the insulating film, the electrode film comprising a metal capable of diffusing metal ions therefrom," with iii) "the barrier film and the insulating film being capable of substantially preventing diffusion of the electrode film metal ions into the alkali-containing glass substrate." Taga fails to meet, *inter alia*, Applicants' claimed barrier film structural requirements, claimed insulating film structural requirements, and claimed electrode film structural requirements.

Dependent claim 12 includes the limitation that "the electrode film metal is at least one selected from the group consisting of silver, copper, and gold," and is, therefore, also allowable.

35 U.S.C. § 103(a) - McCurdy in view of Zieba

Claims 8 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,124,026 to McCurdy et al. ("McCurdy") in view of U.S. Patent No. 5,811,923 to Zieba et al. ("Zieba").

The Office Action acknowledges that "McCurdy does not specifically state that the conductive coating is to be deposited on the SiO_2 film (the exterior of the article)," but asserts that "Zieba discloses that it is known in the glass substrate static dissipating art to deposit a conductive coating on the exterior of an article to provide static discharge." The Office Action concludes that "[i]t would have been obvious . . . to deposit the conductive coating on the SiO_2 film (the exterior of the article), as taught by Zieba, because the exterior location is a viable alternative to the disclosed interior location . . ." (Office Action page 5, numbered section 6, paragraph 3).

The rejection of claims 8 and 10 under § 103(a) over McCurdy and Zieba is respectfully traversed. The combined disclosures of

McCurdy and Zieba would not have rendered obvious Applicants' claimed glass substrate. First, the combined disclosures of McCurdy and Zieba do not teach or suggest all of Applicants' claim limitations. Secondly, there is no suggestion or motivation in either McCurdy or Zieba that would have led one to select the references and combine them in a way that would produce the invention defined by either of Applicants' claim 8 or 10. Thirdly, the grounds of rejection constitute an improper reconstruction of Applicants' claimed invention.

First, the combined disclosures of McCurdy and Zieba do not teach or suggest all of Applicants' claim limitations. Applicants' glass substrate (claim 8) includes i) "a barrier film comprising mainly at least one of indium oxide and tin oxide, and deposited on the under layer" and ii) "an electrode film for forming a display panel, deposited on the insulating film" with iii) "the barrier film and the insulating film being capable of substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate."

McCurdy and Zieba, alone or in combination, neither teach nor suggest, *inter alia*, Applicants' claimed feature of "the barrier film and the insulating film being capable of substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate." McCurdy may disclose an "antimony tin oxide coating" to "enable the attenuation of light energy as it passes through the coated glass article" (col. 3, lines 32-50), and a "conductive coating" that "would enhance the utilization of the anti-reflective film by enabling the coated article to dissipate static charges" (col. 4, lines 44-48). And, Zieba may disclose a possible location of a conductive layer, i.e., "[i]t is also preferred to deposit an electrically conducting layer, which may also function as the antireflective coating, on the front viewing surface of the

device *to provide static discharge*" (emphasis added) (col. 7, lines 14-17).

But, there is absolutely no suggestion whatsoever in the asserted combination of references of Applicants' requirement of "the barrier film and the insulating film being capable of substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate." (The reason that any such suggestion is absent is evident from the discussion below.)

Secondly, the claimed invention would not have been obvious because there is no suggestion or motivation in either McCurdy or Zieba that would have led one to select the references and combine them in a way that would produce the invention defined by either of claims 8 or 10.

McCurdy is directed to an "Anti-Reflective, Reduced Visible Light Transmitting Coated Glass Article," not Applicants' glass substrate suitable for use in a flat panel display or in an automobile rear window. As acknowledged by the examiner, McCurdy discloses (col. 4, lines 44-51) that a conductive coating enables the article to dissipate static charges:

> Alternatively, a conductive coating may also be applied in an anti-reflective coating stack in conjunction with the coating of the present invention. A conductive coating would enhance the utilization of the anti-reflective film by enabling the coated article to dissipate *static charges* that can build up on computer monitor screens. *The conductive coating is generally applied onto the antimony/tin oxide alloy prior to applying the metal oxide coating* (emphasis added).

As also acknowledged by the examiner, "McCurdy does not specifically state that the conductive coating is to be deposited on the SiO_2 film (the exterior of the article)."

Zieba is directed to a "Plasma Display Panel with Infrared Absorbing Coating." As indicated above, Zieba discloses that "[i]t is also preferred to deposit an electrically conducting layer, which may also function as the antireflective coating, on the front viewing surface of the device *to provide static discharge.*"

Thus, in both McCurdy and Zieba, the conductive coating serves to provide *static discharge*. In Applicants' invention, however, the function of the claimed barrier film and insulating film is to prevent the diffusion of metal ions during processing (i.e., heat treatment) of the structure. The incentive for having the claimed barrier film and insulating film capable of substantially preventing the diffusion of metal ions of the electrode film into the alkali-containing glass substrate is, as described by Applicants, to "to provide a glass article having no problem of stain due to metal colloids because of its excellent efficiency of preventing the diffusion of metal ions."

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In view of the subject matter and objective disclosed by both McCurdy and Zieba, there would simply have been no incentive to combine the references so as to arrive at Applicants' claimed glass substrate.

Thus, there is no suggestion or motivation in either McCurdy or Zieba that would have led one to select the references and combine them in a way that would produce the invention defined by either of Applicants' claims 8 or 10.

Thirdly, the grounds of rejection constitute an improper reconstruction of Applicants' claimed invention. In view of the above-described lack of suggestion or motivation in either McCurdy or Zieba, the only possible manner in which the examiner

could have arrived at his proposed modification is through an improper reconstruction. The examiner's modification is the result of impermissible hindsight derived from first having read Applicants' specification, and is an improper reconstruction of the claimed invention using Applicants' own disclosure as a roadmap for selectively combining the applied prior art references.

For at least the above reasons, reconsideration and withdrawal of the rejection of claims 8 and 10 under § 103(a) over McCurdy and Zieba are respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the examiner is respectfully requested to withdraw the outstanding rejection of the claims and pass this application to issue.

Respectfully submitted,

HAUPTMAN KANESAKA BERNER Patent Agents, LLP

Manabu Kanesaka
Registration No. 31,467

Customer Number: 32628
1700 Diagonal Road, Suite 310
Alexandria, Virginia 22314
(703) 519-9785 MAN/yok
Facsimile: (703) 519-7769